



MEETING MINUTES

HANFORD ADVISORY BOARD (HAB, Board)

River and Plateau Committee (RAP)

April 12, 2022

Virtual Meeting via Microsoft Teams

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This is only a summary of issues and actions discussed at this meeting. It may not represent the fullness of represented ideas or opinions, and it should not be used as a substitute for actual public involvement or public comment on any particular topic unless specifically identified as such.

Opening

Ruth Nicholson, HAB Facilitator, welcomed meeting participants and notified the participants that the meeting was being recorded.

Gary Younger, US Department of Energy (DOE), serving as Deputy Designated Federal Officer (DDFO) announced that the meeting was being held in accordance with the Federal Advisory Committee Act (FACA).

Meeting Minute Approval

The committee adopted the February 2022 RAP meeting minutes without comment or revision.

Announcements

Tom Sicilia, Oregon Department of Energy and RAP Chair, explained that he assembled a new “RAP Sheet” (Attachment 4) for the day’s meeting. The topics were intended to align with those on the agenda, but that agenda changed since its development. He expected that many of the topics would still be of interest.

Steve Wiegman, Public at Large and HAB Chair, thanked Tom for his effort in putting together the reference. He felt it was a great value to the committee.

Update on 100K East Reactor Interim Safe Storage Project

Kelley Ebert, DOE, introduced herself as one of two capital projects supervisors for DOE’s Projects and Facilities Division.

She explained that her briefing would explain the purpose of the K East Reactor Interim Safe Storage (ISS) project and consist of an update of how it progressed since the project was last discussed.

She explained that the ISS was essentially a steel enclosure with siding. It was intended to safely store the facilities for decades, allowing radiation to dissipate until a final cleanup solution could be addressed. She noted that it was quite sizable, fitting over the entire reactor structure.

Reviewing project photos, she stated that the team began excavation and backfill operations the previous fall. The site preparation photo depicted work being done in February, when backfill was completed, as preparation to begin foundational work. Following photos depicted formwork and rebar placement, followed by a concrete pour. The foundation was completed in the March time frame.

A video overview for the project was shown: <https://www.youtube.com/watch?v=OsDIpp7phgs>

Kelley reviewed some additional project photos, showing the backfill operations prior to steel erection. She stated that, as of the prior week, additional concrete work was being to prepare bracing for the steel structure. Steel deliveries were underway, with steel cage erection expected to begin that month.

In summary, Kelley stated that placing the K East reactor in ISS was a key component of the remaining work at 100-K and a towards completion of cleanup along the Columbia River. The structure would allow the radioactivity in the reactor core to decay, allowing the project to be completed at a later time at with less risk to workers. The ISS was expected to be complete by the end of calendar year 2022.

Regulatory Perspectives

Roberto Armijo, US Environmental Protection Agency (EPA), introduced himself. He had no questions or comments at that time.

Ryan Miller, Washington State Department of Ecology (Ecology), also had nothing to add. He thanked Kelley for the update and said she did a great job presenting.

Committee Discussion

Steve Wiegman was curious about the design in comparison to earlier roofs put over reactors and why the design was changed. Kelly confirmed they were a new design that fully enclosed the reactor. She was unsure of the reason for the change, however. Steve followed up, asking how many years those were expected to remain in place. It was noted that they were expected to be needed until 2060, per a survey conducted in 1985. Kelley noted that the relevant Record of Decision (ROD) would be needed to confirm the number.

Shelley Cimon, Columbia Riverkeeper, asked if there were any supply chain challenges in steel acquisition for the project. Kelly stated that was someone the contractor was tracking throughout the process and took advantage of early fabrication to mitigate that challenge.

Tom Sicilia asked what the structures design life was and what maintenance or upkeep would be required until the reactor was ready for final disposition. Kelly was unsure of the specific design life but expected it would be long enough to reach the disposition stage. The team was confident in the materials chosen as they had been proven effective on the other cocooned reactors. Over time, the structures would need to be inspected, both interior and exterior, to ensure they remained intact as inspected, and there was no intrusion by wildlife.

To give an idea of the size of the structure, Kelly stated that the grade beams were five-feet high, five-wide, and extended the entire length of the building.

Tom Galioto, Tri-City Development Center (TRIDEC), asked about the specific radiation level that needed to be achieved before final disposition of the reactor. Kelly stated that the ROD would need to be referenced for that, as well. She stated that she was noting those questions that she was not immediately able to answer and could provide those specifics afterwards. Tom Galioto followed up, asking what would be done with the reactor in final disposition. Kelly stated that was not decided and would likely be addressed in the final ROD. Tom Sicilia noted that the [draft Environmental Impact Statement \(EIS\)](#) listed options, such as moving the reactor as a monolith versus dismantling it.

Bob Suyama, Benton County, asked if there were any protections applied to the steel. Kelly stated that the steel was coated in the fabrication process and was expected to last for the needed time to disposition. Bob asked if the team would be doing the same thing with the K-West area next. Kelly stated they would, but the project was not far enough along in other deactivation activities to begin that effort. She was unsure how many years it would take to reach that point.

Dan Solitz, Oregon Hanford Cleanup Board, asked about the cost of the project for both construction and maintenance. Kelly stated that surveillance and maintenance was not in her scope, but the approximate cost of the structure including erection was around \$10 million.

Referencing earlier questions of reactor dispositioning, Chris Sutton, Public at Large, noted that the 2022 Hanford Lifecycle Scope, Schedule, and Cost Report had some mention of the disposition of reactors, stating that following a 75-year decay, reactor blocks would be moved to the Central Plateau inner area for disposal. The N-Reactor was noted to undergo decay followed by a one-piece removal. Kelly acknowledged that those were not detailed plans given how far into the future the disposition activities were. She expected that the final ROD would provide greater detail.

Round Robin

Tom Sicilia introduced the question for the round robin discussion: “What is an unanswered question you have about cleanup?” He invited everyone to participate, even if not on the Board.

Shelley Cimon was interested in the ability to further optimize the groundwater pump and treat system. She thought it would be best to maximize its output in consideration of its limited run time. Further, considering aspects such as the deep vadose zone and perch plumes, she wondered if that system would be capable of meeting the Site’s treatment need over time.

Chris Sutton wondered how long DOE and the other TPA agencies truly expected it would take to clean the site. Did they expect it could be done in the planned 50 to 60 years, or did they expect longer?

Liz Mattson, Hanford Challenge, was interested in how the Site would be marked by signage when cleanup was complete. She thought that future signage requirements would be a topic that could engage people in discussion, as it was a tangible thing to think about. Would it be a sign for each site, or large boundaries? She noted that the line of questioning was relevant to the end states discussion.

Marissa Merker, Nez Perce Tribe, was curious about the presence of uranium in the Columbia River. Pam Larsen, Benton County, explained that the HAB was briefed on the topic in the past. As she recalled, that was a result of agricultural runoff.

Dan Solitz was interested if DOE or any others were looking into other potential uses of the materials on the Hanford Site. He noted that the use of carbon-14 was being considered for use in batteries elsewhere, which the Site had a considerable amount of. He also wondered if that sort of inventory should be made known, as it may be retrievable far into the future.

Miya Burke, Hanford Challenge, noted that she and Liz were each were researching the topic of potential future markings for the Site. She explained that, in the 1980s, an archeologist studied the question and provided recommendations, but the topic since seemed to be forgotten. She was curious as to how the danger of long-lasting waste at Hanford would be handled.

Tom Galioto was interested in how cleanup would be accomplished given the high likelihood of the Site not receiving adequate funding. He wondered if there had been contingency planning done to address that or consider options for adjusting cleanup plans to suit funding expectations. Were no contingency planning done, he recommended that DOE do so as soon as possible.

Ginger Wireman, Ecology, was curious if there had been conversation within DOE around carbon impacts or output. She stated that the output was obscene and could likely be reduced in several areas. She knew that when there were extreme heat events, work would need to be halted and increased numbers of such events would result in additional cost going forward.

Pam was curious about the Site’s plans in ramping up for retrieval, characterization, packaging, and shipping waste offsite, including how many years those plans covered.

Tom Rogers, Washington State Department of Health, noted that, regarding the discussion of signage, he recalled that the Nuclear Regulatory Commission (NRC) had done a lot of work in planning for signage around Yucca Mountain, which could provide additional information in answering that question.

Tom Sicilia explained that he recently learned that there was no system plan for DOE Richland Operations (DOE-RL). He did not know the schedule for cleanup, the order of the Operable Units (OU), the next site to be investigated, or the like. He felt that was a big question to be answered. There were a finite number of sites to be cleaned, and with the Waste Isolation Pilot Plant’s (WIPP) closure in 2050,

everything needed to be offsite by then. He was considering the idea of establishing an Issue Manager (IM) team to look into the topic.

Steve Wiegman wondered where the Site's waste inventory would be centuries from that point out of curiosity to what the Board's descendants would be dealing with centuries into the future.

Tom Sicilia noted that, over the course of that discussion, he heard interesting questions about both the near and far futures. He noted that those questions might serve in developing work plan topics for the following year.

Dan discussed a picture he shared depicting signage in Kakadu National Park in Australia, left by early Australians. It was notable for its depiction of joint swelling, a symptom of radiation poisoning. He stated that showed that they were not the first to think of signage around dangerous radiation. Pam contributed, noting that there was a marker around Fukushima in the form of a picture that indicated not to build houses beyond a certain line.



Signage left by early Australians in Kakadu National Park to mark a uranium deposit.

Tom Sicilia noted that one of his responsibilities with the State of Oregon was oversight of a uranium mill tailing site. There were long-term markers at that site that indicated what was there by measurement, including a map.

Steve noted that, back in the 80s, a lot of original archaeological research was done on signage for the Site. He recalled a book that was written as a result. Among the solutions was installation of a sort of disc into the soil that would discourage digging. He expected that there was a lot of original research that would be worth rediscovering.

Gerry Pollet explained that there were at least two schools of thought on the subject, noting that he was involved in research on the subject in the past. He stated that was not a single instance in the US of institutional controls working for an extended period of time. The most prominent Superfund sites were marked by failures in institutional controls. He encouraged people to look up Harbor Island, where institutional controls failed and resulted in serious exposures.

He stated that the issue at Hanford would be the decision of trying to use institutional controls that could outlast the period of decay or would they instead clean up the site to meet the risk standards for those that would be exposed. He noted that it was already decided that certain sites would be left to decay. He hoped that those decisions would be revisited, should the current Administration be serious about the Justice40 initiative, stating that those decisions were in violation of treaty rights.

Liz thanked the committee for its contributions and ideas on the subject. She stated something that she and Miya discovered in their research. One of the signs developed in the 80s, as part of the effort described by Steve, was on display at the Atomic Brewpub. She felt that showed the importance of institutional knowledge, as much of what was learned 40 years ago had since been largely forgotten.

Fiscal Year 2023 Work Plan and Calendar Overview

Gary Younger introduced the draft work plan and calendar for FY23. He clarified that the document was only meant to serve as a “conversation starter” and could be adjusted to suit the committee's needs. He explained that it was arranged differently than the previous year, based on feedback that fell into two primary categories: the meetings were very long, and the meetings were not conducive to public attendance.

He stated that DOE was looking at potential changes to Board meetings. Instead of quarterly, those would be held every other month. There was a new evening component added based on Board and public feedback. That evening session would serve as time for TPA updates and other presentations, then the following day would allow for discussion of presentations, Board work, and Board actions. It was hoped that the shorter evening sessions would serve as an opportunity to draw attendance from the broader public as well.

Tom Sicilia asked if presenters would be available on the second day for questions. Gary stated that the day was intended primarily for discussions among the Board membership. Questions would be allowed in the evening session; it was not just a presentation, they were intended to feature a full question and answer session. Tom mused that it might be interesting to hold committee reports in the evening so that the public could see what the HAB was doing.

Gary continued, stating that committee meetings were shortened but scheduled more frequently. He hoped that the smaller meetings would make it easier on the attendants. The intent was to spread the current content of a committee meeting over two months, with presentation and discussion in the first session and actions in the second. The drafts also included a three-hour Committee of the Whole (COTW) meeting every quarter.

The draft included a potential year-long agenda, with anticipated topics of interest or importance aligned with scheduled meetings throughout the year. Those aligned with anticipated Site projects. The topics in the work plan would mostly consist of informational updates, with the expectation that emerging issues or advice would sometimes come forward. He emphasized that the topics were able to be changed but served as a basic concept.

Gary provided a brief review of plans being developed for the next in-person meetings, explaining that “hybrid” meetings were being planned, which included an in-person and remote participation component.

Regulatory Perspectives

Roberto Armijo had no additional comments to provide. He noted that EPA was assessing it internally, with recognition that it was just an initial draft. EPA planned to share feedback when available.

Ryan stated that Ecology’s position was similar. Ecology would provide feedback when available.

Committee Discussion

Liz Mattson recalled feedback shared the previous day when the Public Involvement and Communications Committee (PIC) reviewed the draft. She wondered if the planned three-day virtual Leadership Workshop would be less efficient than a two-day in-person event. She also considered the addition of a statement in the work plan that acknowledged the value of in-person meetings. She hoped that in-person meetings could be held soon, preferably before the membership terms ended for several of the Board’s members. Gary explained that the planning process for future in-person meetings was underway.

Tom suggested rearrangement to some work plan items. He suggested recording the feedback provided on the drafts in some form. Gary agreed.

Pam Larsen felt that three days was too long for a Leadership Workshop but acknowledged the value of teambuilding aspects of such workshops overall.

Tom stated that advice creation was challenging for a committee and could become more so when committee meetings were split over two months. He suggested having at least 30 minutes of committee

business each meeting. Gary stated that he hoped to make the best use of meeting time. He noted that, should something come up that required attention, additional meetings could be added.

In regard to the Leadership Workshop comments, Shelley Cimon agreed that three days was too much volunteer time to ask for in a single meeting. She hoped those meetings would instead be more focused. Concerning travel and the hybrid meeting dynamics, she asked if DOE was committing to the opportunity for in-person participation for all members. Gary stated that the goal was to eventually be fully back in person, with the remote component as an option.

Gerry Pollet explained aspects of the hybrid classroom setups utilized at Washington State University, noting that he was a fan of hybrid meetings as it allowed working alternate seats to participate when able and was a great boon to participation and equity. However, he felt that DOE needed to commit to travel for the full membership.

Tom felt that institutional knowledge needed to be considered as part of the work plan, due to long-term members leaving the Board. He wondered if an IM team or something similar, such as a study group, should be formed for those that wanted to learn more about what was done in the past. Chris Sutton noted that he previously suggested the formation of a mentorship committee, allowing new people to talk with older members that have cycled off the Board.

On the topic in institutional knowledge, Gerry stated that it was important for the Board leadership to discuss a transition period so those with decades of knowledge and experience might pass that along. He suggested that the June to September time period could include more than just an orientation for new members. It could also consist of forums for each committee to discuss past Board issues and major topics, such as things that forged past advice. Gary stated that the idea sounded like what DOE hoped for. DOE recognized that depth of knowledge and experience and hoped that those senior members would form a group and find a means of mentoring new members. He noted that the HAB was a public board, and anyone was allowed to participate, even without a vote, in order to maintain that knowledge of the Board as it was passed along. Gerry felt that there needed to be structure in that knowledge transfer. A one-on-one mentorship was different than a committee-level effort and having such an effort reflected in the committees' agendas would reflect a commitment by the institution.

Liz wanted to add committee call placeholders to the calendar. She stated that, should committee meetings be half their present length, they would need to be held every month other than July to allow advice development time. She was also unclear on the advice process in the proposed Board meeting structure. She wondered if another day could be added. Gary said there was flexibility in that structure.

Tom considered options for submitting feedback on the drafts and if that feedback would need to be approved by RAP prior to the Leadership Workshop. Gary said that was open and committees were empowered to provide input. Steve Wiegman stated that it was his opinion that if Tom redlined the draft and shared it with the committee, that would be sufficient. Tom asked that additional committee comments be sent to him by email.

Open Forum

Tom Sicilia explained that open forum was a space to talk about anything the committee wanted to discuss. He asked for ideas.

Chris Sutton stated that, in 2012, the HAB put forth a white paper on values relative to cleanup. He suggested that it might be time to reexamine the product, and potentially update it. Over the next several decades, the site would fundamentally be in an operational state. Upon startup of the Direct-Feed Low-

Activity Waste (DFLAW) facility, much of the same thing would be occurring on the Site every day. He wondered if the values might need to be updated with the new operations in mind. He also suggested that, upon review of the product, interest in new advice topics may be generated. He planned to bring up that same topic in the next day's Tank Waste Committee (TWC) meeting.

Pam noted that Brian Vance previously stated that DOE was not interested in advice on operations. Any advice that would come of such a review would need to be structured from a historical perspective. Tom stated that raised the question of who could tell the Board what to advice on, but stated it was a good point to make. Chris thought it was specifically technical advice that he did not want.

Tom was looking into potential committee workgroups. Topics of interest that he noted included the HAB Values white paper, the Comprehensive Land Use Plan (CLUP), interim reactor disposition, and signage for legacy management. A question was raised as to whether or not IM team members needed to be members of the HAB, as it related to the Board's ability to get work done between June and membership packet approval. It was noted that the results of IM team discussions ultimately became a recommendation to the committee in the end, so it was expected they would be able to continue to work.

Chris felt that carbon tetrachloride would be a worthwhile groundwater topic for a future meeting. Tom noted that there was some relevant information on the committee's Teams page. He stated that he would ask for that topic as part of the next groundwater-focused meeting. He noted that, for a committee meeting in August, topics should be informational only.

In consideration for potential meeting topics, the committee began viewing the topic selection in the RAP's work plan. Various options were considered with no conclusion. It was noted that the upcoming Committee of the Whole, Leadership Workshop, and June Board meetings would all likely impact the topic selection for RAP's August meeting.

It was suggested that Hanford Challenge could provide a presentation on its findings around end states signage and institutional controls. Gary Younger confirmed that anyone could participate in a committee meeting, so it would be appropriate for Liz Mattson and Miya Burke to lead such a discussion. Tom suggested that such a discussion could be in a "gazebo" format, which he described as "kind of like a book report" where someone not from any of the TPA agencies would lead a discussion.

Tom asked if there was anything the committee would like him to bring up at the Leadership Workshop. It was decided that the committee would begin developing a redlined version of the draft FY23 work plan. Many of the concerns from the previous discussion of that work plan were reiterated and recorded in the document. The committee suggested potential additions to the RAP's topic listing in the document.

In discussion of topics that might be valuable for new members, Tom suggested the idea of holding "101" webinars at lunchtime, though not as part of meetings. Gary stated he would see what support that idea might have.

It was noted that the arrangement of meetings in the draft calendar would also affect timing for meeting planning and agenda development. It was expected that meetings would need to be planned earlier and subject matter experts engaged far ahead of time.

Jan Catrell, Washington League of Women Voters, asked if DOE would be obliged to provide the defined support. Gary stated that he saw it as an enhanced probability to deliver. Though things were always subject to change, the long-term planning allowed for predictability.

Committee Business

The committee briefly revisited considerations for its August meeting. It was agreed that Jan Catrell would chair the meeting, as Tom Sicilia's Board membership would have lapsed by that time.

Closing Remarks

Tom Sicilia noted that he hoped to acknowledge the RAP members whose service to the Board would be ending. However, as not all meeting participants could stay to the end, he considered doing so by email instead.

He stated that everyone would always have a seat at the "open table" of RAP. He appreciated everyone's attendance and assistance in helping to prepare for the Leadership Workshop.

Meeting Recording

https://youtu.be/O5Gh7i7_19M

Attachments

[Attachment 1: Deputy Designated Federal Officer Slide](#)

[Attachment 2: Meeting Agenda](#)

[Attachment 3: Draft February RAP Meeting Minutes](#)

[Attachment 4: April RAP Sheet](#)

[Attachment 5: DOE Presentation – 100K East Reactor Interim Safe Storage Project](#)

[Attachment 6: Draft Fiscal Year 2023 Draft Work Plan](#)

[Attachment 7: Draft Fiscal Year 2023 Draft Calendar](#)

[Attachment 8: Fiscal Year 2022 RAP Work Plan](#)

[Attachment 9: HAB Issue Manager Team List](#)

Attendees

Board Members and Alternates:

Bob Suyama, Primary	Dan Solitz, Primary	Gerry Pollet, Primary
Jan Catrell, Primary	Shelley Cimon, Primary	Steve Wiegman, Primary
Tom Galioto, Primary	Chris Sutton, Alternate	Larry Halder, Alternate
Liz Mattson, Alternate	Marissa Merker, Alternate	Pam Larsen, Alternate
Simone Anter, Alternate	Tom Sicilia, Alternate	

Others:

Gary Younger, DOE	Ginger Wireman, Ecology	Abigail Zilar, AttainX
Geoffrey Tyree, DOE	Ryan Miller, Ecology	Dana Cowley, HMIS
JoLynn Garcia, DOE	Geoff Schramm, EPA	Debra Yergen

Kelly Ebert, DOE	Roberto Armijo, EPA	Dieter Bohrmann, CPCCo
Paul Noel, DOE	Tom Rogers, WA Department of Health	Edward Dawson
		Gabe Bohnee, HMIS
		Josh Patnaude, HAB Facil.
		Miya Burke, Hanford Challenge
		Olivia Wilcox, HAB Facil.
		Patrick Conrad, HMIS
		Ruth Nicholson, HAB Facil.

Note: Participants for this virtual meeting were asked to sign in with their name and affiliation in the chat box of Microsoft Teams. Not all attendees shared this information. The attendance list reflects what information was collected at the meeting.